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REMARKS

This is in response to the Office Action of June 22, 2005. In the Office Action Summary and on page 7, the action is listed as final. On page 2, a "non-final rejection" status is listed.

Interview Summary

Applicants would like to thank the Examiner for the courtesy extended during a telephone conference with the Examiner and the undersigned attorney. During the telephone conference, the parties discussed claim 6 and the Yamakura reference. No agreement was reached.

In the Office Action, claims 1-5 are allowed. Claims 7, 8, 15, and 17 are objected to as being dependent upon a rejected base claim but allowable if rewritten in independent form and claims 6, 9-14, 16 and 18-21 are rejected. Applicants respond to rejection of claims 6, 9-14, 16 and 18-21 as follows.

Response to Claim Objections

Claim 13 was objected to based upon informalities. In response to the claim objections, Applicants have amended claim 13, which as amended is believed allowable. Dependent claims 14-19 have also been amended to provide proper antecedent basis in view of the amendments to claim 13. Withdrawal of the claim objections is respectfully requested.

Response to Rejections - 35 U.S.C. § 102

Claims 6, 9-14 and 18-21 are rejected under 35 U.S.C. § 102(e) as being anticipated by Yamakura et al., U.S. Patent Application Publication No. US 2003/0227716.

Claim 10 was previously cancelled so rejection of claim 10 is erroneous and should be withdrawn.

Claim 6 and dependent claims 13-14 and 18 recite *inter alia* a method comprising the steps of:

fabricating a trench having a recessed trench  
surface spaced from a trailing end surface

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of the slider to form a trailing edge of a raised bearing surface of the slider defined by an etched depth of the trench of the slider. (emphasis added)

Claims 6, 13-14 and 18 were rejected on the basis that FIGS. 4 and 10A of Yamakura shows a method including the step of "fabricating a trench (at the left edge of 13) having a recessed trench surface spaced from a trailing end surface 8 of the slider to form a trailing edge of a raised bearing surface of the slider defined by an etched depth of the trench of the slider". This is not expressly or inherently taught by Yamakura.

FIG. 4 of Yamakura is a cross-sectional view of FIG. 3. FIG. 3 is the same as FIG. 7, except surface 22a is unnumbered in FIG. 3.

The slider of FIGS. 3 and 4 includes a raised bearing surface 4a, shallow groove surface 5a, a super shallow groove surface 22a (not numbered in FIG. 4) and deep shallow groove surface 6. Steps 105 and 106 of FIGS. 10A and 10B disclose etching steps for forming the groove surfaces 5a and 6. Surfaces 5a and 6 are etched from the air bearing surfaces so that the etched depth defines groove surfaces 5a and 6 below raised bearing surface 4a.

In step 200 of FIG. 10B, the super shallow groove surface 22a is similarly etched from the air bearing surface so that shallow groove surface 22a is defined by the etched depth from the raised bearing surface 4a.

Thus, as disclosed in Yamakura and as admitted on page 6 of the Office Action, groove surfaces, 5a, 22a and 6 are defined by the etched depth from the raised bearing surface 4a in steps 105, 106 and 200 of FIGS. 10A and 10B.

Surfaces 22a, 5a, and 6 of Yamakura do NOT form a trailing edge of a raised bearing surface of the slider. Thus, Yamakura fails to teach or suggest a trailing edge of a raised bearing surface of the slider defined by an etched depth of the

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trench of the slider as claimed.

As claimed, the trailing edge (TE) of the raised bearing surface (RBS) is defined by an etched depth  $d$  of the trench of the slider as shown in FIG. A below.

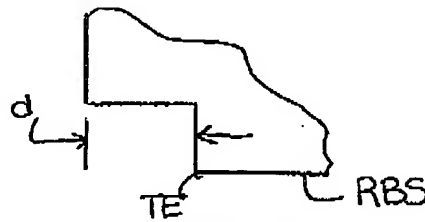


FIG. A

In Yamakura, the etched depths  $d_1$ ,  $d_2$ ,  $d_3$  of steps 106, 105, and 200 defines groove surfaces 6, 5a, and 22a below the raised bearing surface 4a as illustrated in FIG. B below.

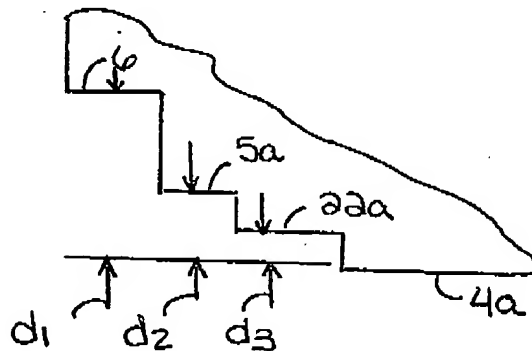


FIG. B

The etched depth cannot define both the groove surfaces 5a, 6, and 22a below the raised bearing surface and the trailing edge of the raised bearing surface perpendicular to the groove surfaces. Since the etched depth of Yamakura defines the depth of the groove surfaces 5a, 6, 22a, it does NOT define a trailing edge of a raised bearing surface defined by an etched depth of the trench of the slider.

Claims 13 is dependent upon claim 6 wherein the trench of claim 6 is fabricated in one process step and comprising the step of:

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fabricating a raised bearing surface and a recessed bearing surface on a disc facing surface of the slider in another process step and the raised bearing surface in the other process step having a trailing edge defined by the trench fabricated in the one process step

Claim 13 was rejected on the basis that Yamakura shows the trench is fabricated in an inherent one process step and including the step of fabricating a raised bearing surface 4a and a recessed bearing surface (the surface at left side next to the surface 4a in vertical direction) on a disc facing surface of the slider in an inherent other process step and the raised bearing surface formed in the other process step having a trailing edge defined by the trench fabricated in the one process step.

As previously discussed above, the etched depth of steps 105, 106 and 200 defines groove surfaces 5a, 6, and 22a and NOT the trailing edge of the raised bearing surface.

Claims 9, 11, and 12 were rejected on the basis that Yamakura shows a transducer portion 7 fabricated proximate to a trailing end of the slider and a trench in an overcoat layer 15 of the slider transducer portion forming a trailing edge of the slider and the trailing edge having a recessed dimension relative to a trailing end surface of the slider defined by an etched depth of the trench of the slider.

Claim 9 recites a slider . . . ; and  
a trench in an overcoat layer of the transducer portion forming a trailing edge of the slider and the trailing edge having a recessed dimension relative to a trailing end surface of the slider defined by an etched depth of the trench of the slider.

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Applicants repeat the above arguments with respect to claim 9. In claim 9, the trailing edge (TE) of the slider has a recessed dimension relative to a trailing end surface (S) of the slider defined by an etched depth  $d$  of the trench of the slider as shown in FIG. C below.

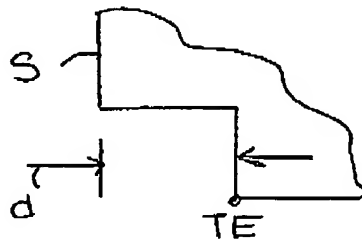


FIG. C

Yamakura does not teach or suggest a trailing edge having a recessed dimension relative to a trailing end surface defined by an etched depth of a trench as claimed. Reference No. 8 of Yamakura denotes an "air outflow end" or the trailing end surface. Surface 6, 5a and 22a of Yamakura are etched from the air bearing surface in steps 105, 106 and 200 not the trailing end surface 8 of Yamakura. Since surfaces 6, 5a, and 22a are etched from the air bearing surface, Yamakura does not teach a trailing edge having a recessed dimension relative to the trailing end surface 8 defined by an etched depth of the trench as claimed.

Claim 11 further recites that the trench forms a trailing edge of a raised bearing surface of the slider which is not taught or suggested by Yamakura as discussed above.

Claim 18 is dependent upon claim 13 and recites that "the raised bearing surface and the recessed bearing surface and the trailing edge of the raised bearing surface are etched relative to different orthogonal surfaces of the slider in the one process and the other process steps".

Claim 18 was rejected on the basis that Yamakura "shows that the raised bearing surface and the recessed bearing surface

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and the raised bearing surface trailing edge of the raised bearing surface are etched to different orthogonal surfaces of the slider in the one and the other process steps" without reference to the specific disclosure of Yamakura that teaches the recited claims language. Steps 105, 106 and 200 of Yamakura teach etching relative to one orthogonal surface of the slider, namely, the air bearing or disc facing surface and thus the Office Action fails to establish a *prima facie* basis to reject the claim 18.

Claim 19 is dependent upon claim 13 and further recites a method including the steps of:

- etching a trench relative to a first orientation in the one process step; and
- etching the recessed bearing surface relative to a second orientation in the other process step.

Claim 19 was rejected on the basis that Yamakura shows etching the trench relative to a first orientation in the one process step and etching the recessed bearing surface relative to a second orientation in the other process step without reference to specific disclosure that teaches the recited claim language.

Steps 105 and 106 of FIG. 10A and steps of 105, 106 and 200 of FIG. 10B teach multiple etching steps in a single orientation (e.g. vertical direction) relative to the air bearing surface and does not teach the subject matter claimed.

Claims 20 and 21 were rejected as product-by-process claims on the basis that patentability of product-by-process claims must be determined by the product itself and not the actual process. Where, however, the manufacturing steps impart distinct structural characteristics to the final product, the structural characteristics or differences must be considered with respect to patentability. See MPEP § 2113.

In the slider of claim 20 formed from the method steps of claim 6, the raised bearing surface includes a trailing edge which

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is defined by an etched depth of a trench. FIG. 6 of Applicants' specification illustrates a slider including a trench and a trailing edge formed by an etched depth of the trench. The slider of FIG. 6 of Applicants' specification is structurally different from prior sliders where the trailing edge is formed by a bearing surface etch or mask as illustrated in FIGS. 3-4 of Yamakura. Since as discussed above, Yamakura does not teach a trench and trailing edge defined by an etched depth of the trench, Yamakura does not teach each of the structural limitations of claim 20.

In the slider of claim 21 formed from the method steps of claim 1, the trench and trailing edge are formed at the wafer level prior to slicing the wafer and fabricating air bearing surfaces along the slider bar. As described in Applicants' specification, wafer level fabrication of the trench forms the trailing edge of the slider bar prior to fabricating the raised and recessed bearing surfaces of the slider or slider bar. Yamakura does not teach fabricating a trench at the wafer level and thus the method steps of claim 21 form an additional wafer level feature not taught by Yamakura. Allowance of claim 21 is respectfully requested.

**Response to Rejections - 35 U.S.C. § 103**

Claim 16 is rejected under 35 U.S.C. § 103 as being unpatentable over Yamakura in view of Horr, Re 30,601. Claim 16 is dependent upon claim 6 which is allowable over the combination of Yamakura and Horr. Accordingly, allowance of claim 16 is respectfully requested.

Applicants acknowledge allowance of claims 1-5 and 21.

It is also acknowledged that claims 7, 8, 15, 17 are allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claim.


The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit

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Account No. 23-1123.

Respectfully submitted,

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